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New Zealand Pat. No. 154.363

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PATENT SEARCH DEPARTMENT

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➤ QUALIFIED IN NOVELTY, VALIDITY AND INFRINGEMENT SEARCHES ➤

TO THE ATTENTION OF:	DECISION:

154363. VENETIAN BLIND: ONE LIFTING CORD AT FRONT, OTHER AT BACK OF BLIND. 46.6. Benson Pty. Ltd. (Inventor, B. Benson.) 19 September 1969. (4 November 1968, New Zealand.) filed

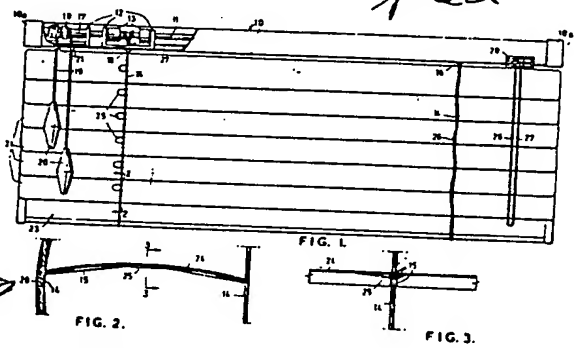

FIG. 1.

FIG. 2.

FIG. 3.

To avoid providing holes in venetian blind slats to clear the lifting cords it is proposed to secure the cords outside the slats, one at the front of the blind and the second at the back. It is then necessary to laterally locate the slats and this may be done by joggling tongues from the slats to engage the transverse runs of the blind tilting and support ladders. The drawings show a blind with slats 24 supported by cord ladders 14, transverse threads 15 engaging tongues 16 in the blinds. Tilting of the blinds is accomplished by cords 19 which rotate the bar on which the top end of the ladders are anchored. Lifting cords 26, 27 are each interwoven with one of the ladders, cord 26 passing down the front of the venetian blind while 27 passes down the back of the other ladder. Both lifting cords and ladder bottom are anchored to lower slat of the blind.

OPPOSITIONS CAN BE FILED UP TO ..... 13 NOV. 1970 .....

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154363

NEW ZEALAND

PATENTS ACT, 1953

No.: 154,363

DATE: 4 November 1968

COMPLETE SPECIFICATION

"Improvements in Venetian Blinds"

I/WE, BENSON PTY. LTD, a Company incorporated under the laws of the State of Queensland, Commonwealth of Australia, of 859 Stanley Street, Woolloongabba, Brisbane, Queensland, Australia,

hereby declare the invention for which I/we pray that a patent may be granted to me/us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

— 1 —

THIS INVENTION relates to impr vements in venetian blinds.

In a conventional venetian blind, a series of transversely curved sheet metal slats and a relatively heavy bottom rail are supported in spaced parallel relationship below a head box by two or more ladders, each of which may consist of a pair of thin cords connected at equally spaced intervals by threads, which are woven into the cords. The blind slats may be tilted by a tilter device in the head box, connected to the tops of the ladder cords and operable by tilter cords hanging in front of one side of the blind. The blind may be raised or lowered by lifting cords passing through a cord lock in the head box, carried down through corresponding slotted holes in all of the slats, and secured to the bottom rail. Each of the lifting cords is aligned between the side cords of a ladder.

A disadvantage in such a blind is that whereas, in earlier venetian blinds, ladders made of tape more or less masked the slotted holes for the lifting cords, in a blind with cord type ladders these holes are not so masked, and are very apparent, permitting a good deal of light to pass through the blinds when closed.

The present invention has been devised to overcome the said present disadvantage, and it has for its general object the provision of a venetian blind of which the slats are such that very little if any light will pass through them when the blind is closed.

Accordingly, the invention resides broadly, in a venetian blind of the type having a series of slats supported tiltably by the transverse sections of flexible

ladder structur s and capable of being raised or lowered by at least tw lifting cords, characterized in that attachment means are provided for securing each slat to a transverse section of one of the ladders, and one lifting cord is in front of, the other behind, the blind slats. Preferably the means for releasably securing each slat to the transverse section of a blind ladder consists of a tongue defined by a substantially U-shaped cut in the slat, and which is adapted to be releasably engaged with the said transverse section. Other features of the invention will become apparent from the following description.

In order that a preferred embodiment of the invention may be readily understood and carried into practical effect, reference is now made to the accompanying drawings, wherein:-

FIG. 1 is a partly broken-away elevational view of a venetian blind according to the invention, viewed from the inside and in fully closed arrangement,

FIG. 2 is a sectional view to enlarged scale of part of the blind, taken along line ~~3-3~~ 2-2 and with the blind in fully open position, and

FIG. 3 is a sectional view along line 3-3 in Fig. 2.

The venetian blind shown in the drawings has a channelled sheet metal head box 10, with end closures 10a, the head box being adapted to be mounted under the top of a window opening by any suitable brackets (not shown) or other means. Within this head box is a tilter, consisting mainly of a shaft 11 rotatable in bearing brackets 12 and carrying for each ladder of the blind a

pair f spaced collars 13. Each of the venetian blind ladders 14 consists of a pair of cords connected at equally spaced intervals by a number of sets of adjacent transverse threads 15 which are woven into the cords 14. The upper parts of the cords of each ladder 14 are passed through a pair of eyelets 16 in the bottom of the head box 10, one near the front, the other near the back, and are wound in opposite directions about the tilter shaft 11, between a pair of collars 13, to which the cord ends are made fast. A tilter drum 17 is provided on one end of the tilter shaft 11, and is divided by a central collar 18. Tilter cords 19, with pendants 20, are passed up through eyelets 21 in the bottom of the head box 10, over a guide bar 22 and are wound in opposite directions about the drum 17, to either side of the collar 18, to which the tilter cords are made fast. Thus, by pulling down one or the other of the pendants 20, the tilter shaft 11 may be turned in one direction or the other to tilt the blind ladders accordingly.

The lower ends of the cords of both ladders 14 are made fast to the bottom rail 23 of the blind, which is of generally conventional type.

The slats 24 of the venetian blind are of thin sheet metal, formed with a transverse arcuate curve. Each of these slats is supported, convex face uppermost, on corresponding sets of transverse threads 15 of the blind ladders 14. Unlike conventional venetian blind slats, no slotted holes are formed through them to receive lifting cords; but each slat is formed, near to one end, with a substantially U-shaped cut f which the side portions are substantially parallel to the sides of the slat, this cut

defining a tongue 25. Two close bends in opposite directions are formed across the base portion of the tongue 25 so that the tongue, from its base to its extremity, first inclines downwardly for a short distance, and then inclines upwardly, so its extremity is flush with the surrounding part of the slat. The tongue is easily engaged with the transverse set of threads 15 of the ladder supporting the appropriate end portion of the slat by flexing the slat near the tongue, so the tongue stands clear of the slat bottom. When the slat resiliently returns to original condition, the threads will be held firmly. Consequently, the slat is restrained against free slidable longitudinal movement, and will be tilted correspondingly to the blind ladders when the tilter device is operated.

To raise and lower the blind, there are provided a pair of lifting cords 26 and 27, which are the two parts of a single loop of cord, the ends of which are passed up through a cord lock device 28 of known type, mounted in the head box 10 at the opposite end to the tilter cords 19. Each of the lifting cords is carried along inside the head box, and is passed down through one of the pair of eyelets 16 through which the cords of one of the ladders 14 are passed, the lifting cord 27 being passed down through an eyelet 16 near one side of, and at the front, of the bottom of the head box 10, the other lifting cord 26 being passed down through the eyelet 16 near the other side of, and at the rear, of the head box bottom. Each lifting cord, then, is carried down close to either a front or a rear ladder cord, being passed in alternating fashion to one side or the other of the

transverse threads 15 of the ladder, the extremity of the cord 27 being passed in front of, and the extremity of the cord 26 being passed behind, the bottom rail 23, and being made fast to this rail. Each of the lifting cords 26 and 27 then, is closely adjacent a cord of a ladder 14, and since both the lifting cords and the ladder cords are of fairly small diameter, the lifting cords are not readily apparent, and except by fairly close examination, only the generally conventional ladders are noticeable. The bottom rail 23 being diagonally supported by the lifting cords, the blind may be easily and conveniently raised or lowered in usual way.

In each blind slat 24, the only aperture is the U-shaped cut defining the tongue 25 near one end, and it will be found that when the blind is fully closed, as shown in Fig. 1, no significant light will pass through these.

If desired, each of the blind slats 24 may be made with a tongue 25 for each of the ladders supporting the slat; and the tongues of the slats may be modified in design.

Venetian blinds according to the invention will be found to be very effective in achieving the objects for which they have been devised. It will be understood, of course, that the particular embodiment of the invention herein described and illustrated may be subject to many minor modifications of constructional detail and design, which will be readily apparent to persons skilled in the art, without departing from the scope of the invention as defined by the following claims.

What we claim is:-

1. A venetian blind of the type having a series of slats supported tiltably by the transverse sections of flexible ladder structures and capable of being raised or lowered by a pair of lifting cords; characterized in that attachment means are provided for securing each slat to a transverse section of one of the ladders, and one lifting cord is in front of, the other behind, the blind slats.

2. A venetian blind according to Claim 1 and further characterized in that the attachment means consists of a tongue extending from the slat, engaging the transverse ladder section.

3. A venetian blind according to Claim 2 and further characterized in that the tongue formed integrally with the slat, being defined by a substantially U-shaped cut therein.

4. A venetian blind according to Claim 3 and further characterized in that two transverse obtuse angle bends ~~through acute angles~~ are formed across the base of the tongue so that from its base towards its extremity, the tongue first inclines downwardly from the surrounding part of the slat, and then inclines upwardly.

A.J.P. & S. per 1.5.70 MHS

5. A venetian blind according to any one of the preceding claims and further characterized in that each of the ladder structures consists of a pair of front and rear ladder cords, each of the transverse sections being threads woven into the said ladder cords; and one lifting cord is adjacent to the front ladder cord of one ladder, the other lifting cord being adjacent to the rear ladder cord of another ladder.

6. A venetian blind according to any one of the pre ding claims and furth r characterized in that a bottom rail is provided below the assembly of slats, and the lower extremities of the lifting cords and of the ladders are made fast to the bottom rail.

7. A venetian blind substantially as herein described with reference to the accompanying drawings.

DATED THIS 19th DAY OF SEPTEMBER 1969
A. J. PARK & SON
PER D. W. Watts.
AGENTS FOR THE APPLICANTS

FIG. 1.

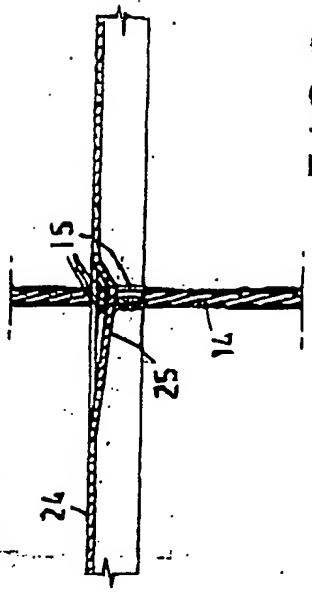

FIG. 3.

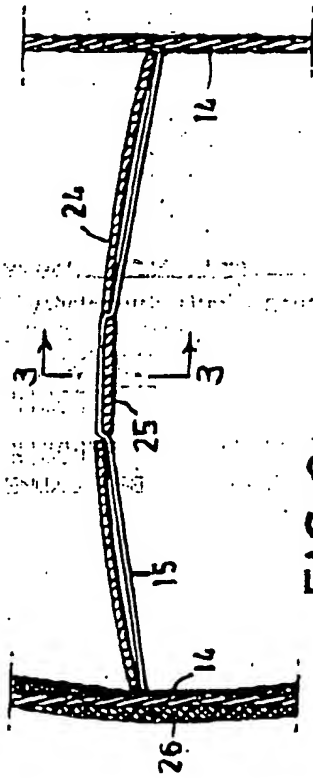

FIG. 2.

BENSON PTY. LTD.
By ~~his~~/their authorised Agents,
A. J. PARK & SON,
per D. W. Atkins.